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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,735	05/18/2006	Youngbok Son	LK-0017	3547

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Chantilly, VA 20153-1200

EXAMINER

SCRUGGS, ROBERT J

ART UNIT	PAPER NUMBER
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3723

MAIL DATE	DELIVERY MODE
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04/09/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,735	Applicant(s) SON ET AL.	
	Examiner ROBERT SCRUGGS	Art Unit 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 5, 2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waldhauser (4817233) in view of Nordeen (4426751).

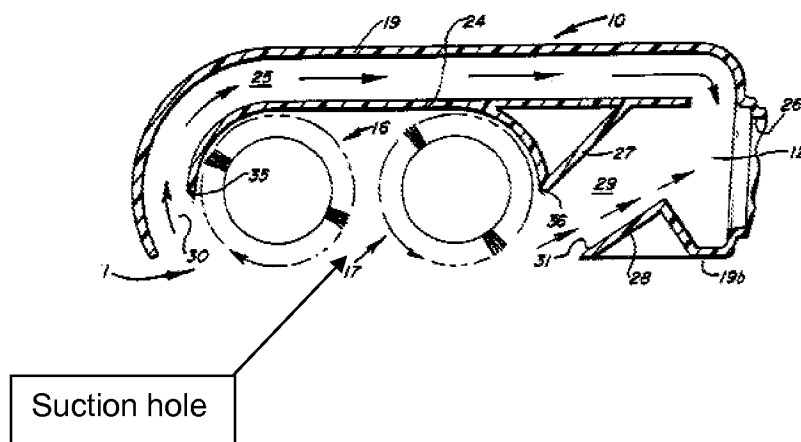
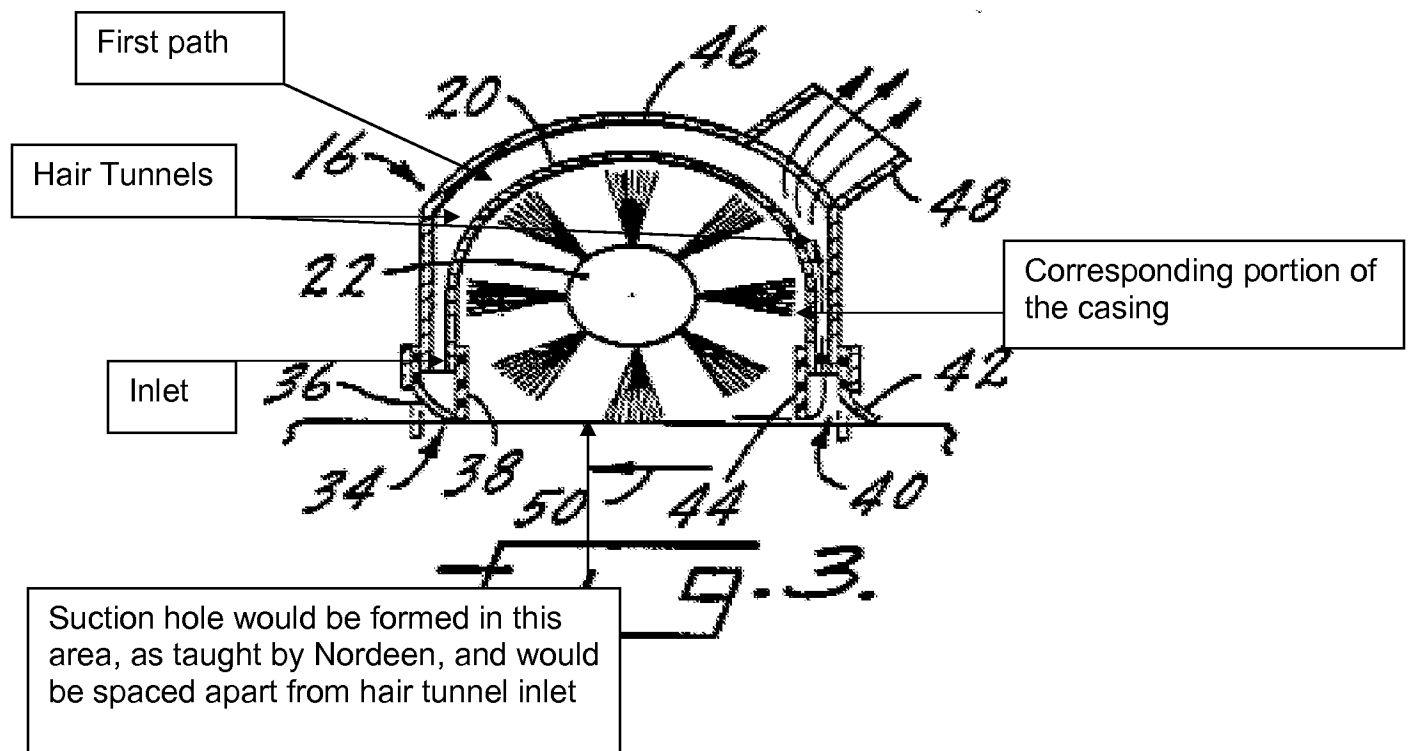
In reference to claim 1, Waldhauser discloses a vacuum cleaner, comprising: a suction head (16) installed at a front end of a suction path (48), wherein a vacuum pressure generated by a suction motor (Column 1, Lines 41-43) that draws in substances, a brush (22) rotatably installed in the suction head and configured to rotatably contact a surface to be cleaned (Figure 3 or see figure below) and at least one hair tunnel (see figure below) formed in the suction head, wherein the at least one hair tunnel

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preferentially draws thin and long substances from the surface, but lacks, mounting the brush in a suction hole formed in a bottom surface of an outer casing of the suction head for drawing substances through the suction hole and into the suction path, and wherein an inlet (see figure below) into the at least one hair tunnel and an inlet into the suction hole are spaced apart from each other on the bottom surface of the outer casing with a corresponding portion of the bottom surface of the outer casing positioned therebetween such that the brush installed in the suction hole does not interfere with the at least one hair tunnel. However, Nordeen teaches that it is old and well known in the art to form a brush housing (24) with a suction hole (see figure below) and with a suction opening/second path (29) thereby allowing substances to be drawn in through said suction hole, through said suction opening and into a suction path (26). It would have been obvious to one of ordinary skill in the art to modify the brush housing (20), of Waldhauser, with the known technique of forming a brush housing with a suction hole and with a suction opening thereby allowing substances to be drawn in through said suction hole, through said suction opening and into a suction path, as taught by Nordeen, and the results would have been predictable. In this situation, one could improve the transfer of material from the brush to the suction path. The examiner also notes that the limitations of having an inlet into the at least one hair tunnel and an inlet into the suction hole are spaced apart from each other on the bottom surface of the outer casing with a corresponding portion of the bottom surface of the outer casing positioned therebetween such that the brush installed in the suction hole does not

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interfere with the at least one hair tunnel would be produced in the combination (as shown below).



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In reference to claim 2, Waldhauser also shows that the at least one hair tunnel is linked to the front end of the suction path by a first path (see figures above) that is isolated from second path (i.e. 29 as taught by Nordeen) that links the suction hole to the front end of the suction path in the suction head (see figures above).

In reference to claim 3, Waldhauser also shows that the inlet of the at least one hair tunnel surrounds the suction hole, with the corresponding portion of the outer casing of the suction head positioned therebetween (see figure above).

In reference to claim 4, Waldhauser also shows that the inlet of the at least one hair tunnel is positioned at one of a front portion or a rear portion of the suction hole in a head progress direction corresponding to a movement direction of the suction head (Figures 3 and 4).

In reference to claim 6, Waldhauser also discloses a first sweeper (36) that protrudes downward from the bottom surface of the outer casing along a first peripheral edge of the inlet of the at least one hair tunnel, and a second sweeper (38) that protrudes downward from the bottom surface of the outer casing along a second peripheral edge of the inlet of the at least one hair tunnel opposite the first peripheral edge, wherein the second peripheral edge is closer to the suction hole than the first peripheral edge.

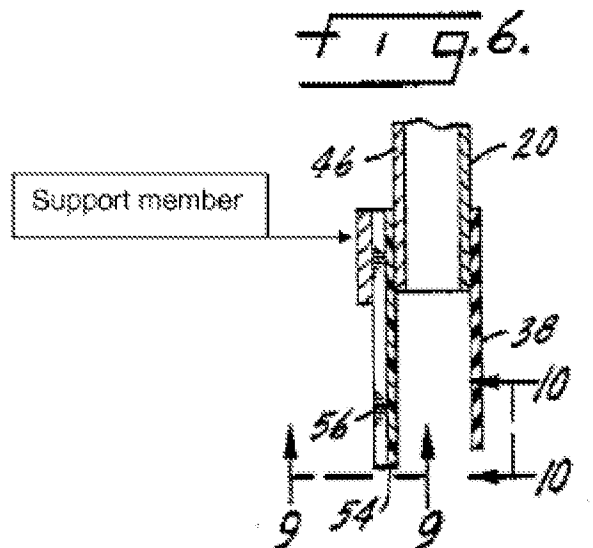
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In reference to claim 8, Waldhauser also shows that the first and second sweepers are formed in a comb-tooth shape (Figures 9 and 10).

In reference to claim 9, Waldhauser also teaches that the sweepers can be formed with various shapes and sizes therefore obviously if one were to select the first sweeper as seen in figure 10 and the second sweeper as shown in figure 9 that obviously the interval of the comb teeth of the second sweeper as seen in figure 9 would be smaller than that of the comb teeth of the first sweeper as seen in figure 10.

In reference to claim 10, Waldhauser also teaches that the comb teeth of the first sweeper can vary in size (Figure 6) therefore obviously one could select the length of the teeth of the first sweeper to be longer than those of the second sweeper depending on the specific needs of a user.

In reference to claim 11, Waldhauser also shows that the some of the comb teeth of the first sweeper comprise a support member for reducing an operation resistance by the first sweeper (see figure below).



In reference to claim 12, Waldhauser also shows at least one sweeper (36) provided at the inlet of the at least one hair tunnel, wherein the at least one sweeper extends downward from the bottom surface of the outer casing at a peripheral edge portion of the inlet of the at least one hair tunnel (Figure 3).

4. Claim 7, is rejected under 35 U.S.C. 103(a) as being unpatentable over Waldhauser (4817233) in view of Nordeen (4426751) and Fernandez-Grandizo Martinez (2003/0145425). Waldhauser discloses the claimed invention previously mentioned above, but lacks, having a second sweeper is formed in a group bristle shape with a predetermined width. However, Fernandez-Grandizo Martinez teaches a technique of forming a second sweeper (106) in a group bristle shape with a predetermined width (Figure 4). It would have been obvious to one of ordinary skill in the art to modify the second sweeper, of Waldhauser, with the known technique of forming a second sweeper in a group bristle shape with a predetermined width, as

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taught by Fernandez-Grandizo Martinez, and the results would have been predictable. In this situation, one could provide a sweeper that can be easily re-configured for cleaning a wide variety of working surfaces.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4 and 6-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT SCRUGGS whose telephone number is (571)272-8682. The examiner can normally be reached on Monday-Friday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT SCRUGGS/
Examiner, Art Unit 3723